Transbond™ Plus Self Etching Primer

Frequently Asked Questions

1. Why is the liquid tinted pale yellow?
   Camphorquinone (CPQ) causes the pale yellow tint. Therefore, after proper activation, the saturated applicator fiber tip will look pale yellow. CPQ is only contained in the outer large blister. If the contents of the first blister do not properly mix with the contents of the middle blister or if the applicator tip is not saturated with the properly mixed liquid, then the applicator tip will look clear.

2. Is this product moisture tolerant?
   Yes, it contains a hydrophilic component which tolerates small amounts of moisture.[1,3]

3. Is pumicing the teeth required before the use of Transbond™ Plus Self Etching Primer?
   For maximum bond strength and bond reliability it is important to begin the procedure with a clean tooth surface. The tooth surface must be free of plaque, calculus and salivary pellicle. There are two methods for achieving a clean tooth surface prior to the application of Transbond Plus Self Etching Primer: *mechanical,* e.g. pumice or prophy paste, and *chemical*, e.g. phosphoric acid etchant.

4. What are the potential drawbacks of the prophy step?
   For patients with poor oral hygiene or gingival hypertrophy an aggressive prophy step can cause damage to the gingival tissue which causes gingival crevicular fluid or blood to flow. This can contaminate the tooth surface and compromise bonding. Phosphoric acid can be used to achieve a clean tooth surface.

5. What do you recommend when using Transbond Plus Self Etching Primer on patients with poor oral hygiene?
   As with any orthodontic bonding system it is important that a clean tooth surface is prepared at the time of bonding. You may consider that the patient undergo a thorough prophy cleaning within 10 days prior to the bonding appointment.

   At the time of bonding, follow up with a supragingival prophy in the area of the tooth to be bonded. This two-step approach may allow the gingival tissue to heal and minimize the gingival crevicular fluid (GCF) or blood from contaminating the tooth surface during the bonding appointment. GCF contamination may be one of many factors that contribute to bond failure.

6. Can I use a phosphoric acid etch prior to the application of Transbond Plus Self Etching Primer?
   Yes. Phosphoric acid can be applied as a means to achieve a clean tooth surface, before the application of Transbond Plus Self Etching Primer.

7. Why is this technique so different from what has been taught about applying traditional etchants?
   This product uses a different chemistry and technology for etching teeth. Traditional etchants are lightly painted on the enamel without rubbing. Transbond Plus Self Etching Primer must be RUBBED onto the enamel for 3 to 5 seconds in order to continue the etching process. This product will not etch properly if it is applied using the traditional phosphoric acid etchant technique.

8. Why should the material be rubbed on the enamel for 3 to 5 seconds?
   RUBBING the material on the enamel delivers unreacted etchant/primer molecules to the enamel surface as they are depleted. It is very important to not just paint the product on the enamel but RUB it onto the enamel with light force. This technique actually helps with the etching process.

9. Will rubbing this product for 3 to 5 seconds damage the enamel rods?
   No. This product may actually cause less enamel loss compared with traditional etchants.[4]

10. How can one product work as both etchant and primer?
    The chemistry used in this product consists of a bifunctional molecule on a methacrylate base. When RUBBED onto the enamel, the etchant component will expose the enamel rods while the primer components simultaneously penetrate into those exposed rods.

11. How does the etch pattern using Transbond Plus Self Etching Primer compare to the etch pattern using phosphoric acid?
    The etch pattern using this product is well defined and comparable to traditional phosphoric acid etchants. See SEM comparisons of the two etch patterns in the product brochure. One of the advantages of this system is that demineralization and resin penetration occur concurrently, therefore, the etching depth and the resin penetration depth are identical.

12. How many teeth can be etched and primed with one disposable unit?
    One unit contains enough material for bonding one arch only.

13. How long can the etchant/primer be left on the tooth before bonding?
    After applying the etchant/primer and delivering a gentle air burst, the tooth is ready to be bonded. Bonding can be delayed for up to 2 minutes if the tooth has not been contaminated with moisture or saliva. If bonding is delayed for more than 2 minutes or moisture/saliva contamination is imminent, then another application of etchant/primer and gentle air burst is recommended.

14. What happens to the debris or the residue after etching?
    The residue produced during the etching process is either blown away with the excess primer (during the air burst step) or is incorporated into the matrix during light curing. This process does not affect bond strength.

15. How will I know that sufficient etching has been achieved? Will a frosty look appear on the enamel?
    No. The enamel will not look frosty white. It should however look uniformly shiny after the gentle air burst step. Also, enamel ridges may be visible on the etched surfaces.

16. How will I know that the etchant has been inactivated?
    Reaction with the enamel, the air burst step and light curing all work together to ensure the deactivation of the etching process.

17. Why is a 2-second air burst required after rubbing the Transbond™ Plus Self Etching Primer onto the tooth surface?

    The 2-second airburst is necessary to thin out the primer on the tooth surface and evaporate the water component to ensure good bond strength.

18. What will happen if the air burst step is not delivered?
    The bond strength will be lower if the 2-second airburst is not delivered.

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19. What will happen if the gentle air burst is delivered toward the gingiva?
This product is corrosive (see MSDS). It also contains methacrylates which in some patients can cause sensitive or allergic reaction if the chemical contacts tissue. Contact with gingival tissue can also stimulate weeping of the gingival crevicular fluid onto the bonding area. Therefore, when delivering the air burst after the etching process, it should be a gentle air stream directed across the tooth, mesial to distal.

20. Can this material cause allergic sensitivities?
The product contains methacrylated phosphoric acid esters. Contact with skin or mucous membranes may cause irritation or allergic reaction in some individuals. Gloves must be worn when handling this product. Thoroughly rinse accidentally exposed areas with water. Contact a physician if irritation persists.

21. What will happen if the primer is light-cured after the gentle air burst step, but before bonding?
Light-curing before bonding will not lower bond strength, however, it is not necessary.

22. Why does the applicator have to be inserted back into the reservoir before each application?
The applicator has to be inserted into the reservoir before applying on each tooth so that it can be saturated with a fresh supply of the material.

23. Can this product be used with metal and ceramic brackets?
Yes. Follow bracket manufacturers' recommendations for use.

24. Can this product be used with indirect bonding if only light-cured adhesives and resins are used?
It is not recommended to use this product for indirect bonding with chemical cure systems.

25. Is there a bond strength difference between bonding to dry vs. moist teeth?
No. Bond strength is similar whether the product is applied to dry or moist teeth.[1,2,3]

26. Does the adhesive need to be refrigerated when not in use?
No. The product should be stored at ambient temperatures, away from sources of light.

27. What is the shelf life of Transbond Plus Self Etching Primer?
The shelf life of the product is 18 months from date of manufacture. The product expiration date is printed on the packaging.

28. Can a LED curing light be used with this product?
Yes, testing has been done in the lab using the Ortholux™ LED Curing Light. The testing showed good bond strength with the light. The formulation contains camphorquinone (CPQ). CPQ is the photoinitiator in most light-curable adhesives and primers. CPQ is activated by lights covering the 430-480 nm range. This enhances the compatibility of Transbond Plus Self Etching Primer with most light-curing systems.

29. Can the applicator be bent?
Yes. The applicator is bendable at the tip so that it can be used at any angle to facilitate application.

30. If there is enough material left in the blister can it be used for rebonding another patient?
No. Do not use one unit on two patients. Doing so will cause cross contamination between patients.

31. What solvent is used in this product?
Water is the only solvent used in this product.

32. Does this product contain a filler?
No, it does not contain any filler.

33. Can this product be used with chem-cure adhesives such as Unite™ Adhesive, Concise™ Adhesive or Sondhi™ Indirect Resin A and B?
Test results indicated lowered bond strengths with all chem-cure adhesives. Therefore, we do not recommend this product be used with these adhesives.

34. How can I clean instruments or clothing if the material is accidentally spilled?
It is best to wash instruments or clothing immediately if accidentally contaminated with uncured material. Cured material can be very difficult to remove. Ethanol may be useful for cleaning dried materials. Rinse skin and eyes immediately for 15 minutes in case of accidental exposure.

[1] Cacciafesta, V., Sfondrini, M.F., De Angelis, M., Scribante, A., Klersy, C., Effect of water and saliva contamination on shear bond strength of brackets bonded with conventional, hydrophilic, and self-etching primers, AJO/DO Vol. 123, No. 6, pp. 633-639, 2003.

[2] Asgari, S., Salas, A., English, J., Powers, J., Clinical Evaluation of Bond Failure Rates with a new Self-Etching Primer, JCO, Vol. 36, No. 12, 2002.

[3] Rajagopal, R., Padmanabhan, S., Gnanamani, J., A Comparison of Shear Bond Strength and Debonding Characteristics of Conventional, Moisture-Insensitive, and Self-etching Primers In Vitro, Angle Orthodontist, Vol. 74, No. 2, pp. 264-268, 2004.

[4] Hosein, I., Sherriff, M., Ireland, A.J., Enamel loss during bonding, debonding, and cleanup with use of a self-etching primer, AJO/DO, pp. 717-723, December 2004.

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